Work Order March-22-12 4:32.			Those	*82	113*					Page 1
Item ID: D4 Revision ID:	107-667-205			Accept	*N900	04010	0 *	Setup Star	I	S1*
Item Name: Cro	osstube Aft							Stop	*N	S2*
Start Date: 22	/03/2012 Start C	ty: 1.00	*	*	Cust Item 1	D:				
Required Date: 05/	/04/2012 Req'd	Qty: 1.00	*	*	Customer:					
Reference:			·			9				
Approvals: P	rocess Plan: M	LJ	Date: 12/0	3\11 Tooling:	D:	ate:		Run Star	1/1	R1*
Q	C:		_ Date:	SPC (Y/N):	D	ate:		Stop	` *N	R2*
Sequence ID/ Work Center ID	Operati Descrip			Set Up/ Run Hours	Tool ID	Tool # Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nb									
D407-667-245	Rev F/DEO								•	
*100 *100* DC Document Control	DOCUME	ENT CONTRO Memo Photocopy b)L pluefile and create I	0.00 0.00 abels as per PPP D407-667-205	008 CHG001 JBS	2/0/17	490	O MC	5 12-5	- 11
	.				2 //					12/02/
*110	Pick Kit Packaging	;		0.00			1		17-5	-2
Packaging Packaging		Memo	;	0.00			1	H		;
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120				0.00	•		7			· · ·
120 CNC Bend I	BENDING		CROSSTUBES	0.00				1	2-5-	2
CNC Delta 100 Bender		Memo 1-Bend tube Folio 21	as per Dwg D407-	0.00 667-245 using CNC bender prog	ram 407 Aft and		2		*	

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W/O: 8	2113	WORK ORDER CHAI	NGES				,	
DATE	STEP	PROCEDURE CHANGE	··.	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No: <u>D407-6607-205</u>	PAR #:	Faul	t Categor	y: <u> </u>	wse	_ NCR: Ves No	DQAQUA	Z Date	: 12/05/28
				100	_				12/129

NCR:	15/	, W	ORK ORI	DER NON-CONFORMANCE	(NCR)			······································
		Description of NC		Corrective Action Section B		Verification	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector
12.0504	140	EXTRA HOLES DRILLED IN CUFF.	12.05.44	Acceptable	NA	5	12 05.04	
		<u> </u>	PSION			15/10/53	PS1042	17/15/23
			P 12.05.09 Blore	APP Add DS 9346 Rev. O to PAPIER WORK		Colyman		Sphilit
	3 - 1							

Work Ord March-22-12 4		113		*821	113*							Page 2	
Item ID: Revision ID: Item Name:	D407-667-20 Crosstube Aft			Accept	*N900	040	100)*	Setup	Start Stop	I VI .	S1* S2*	
Start Date: Required Date: Reference:	22/03/2012 : 05/04/2012	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item 1 Customer:	D:							
Approvals:	Process Pla	ın:	Date:	Tooling:	D	ate:			Run	Start	1/1	R1*	
	QC:		Date:	SPC (Y/N):	Ds	ate:				Stop	*N	R2*	
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	t Rej Qty		Reject Number	Insp. Stamp	_
130		QC15- Crosstube Dimen	sional Check	0.00									
130		Memo		0.00 5 17/	Blos								

Quality Control

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DATE	STEP	PRO	OCEDURE CH	ANGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	·	PAR #:	Fault Cat	egory:	NC	R: Yes	No DQ	A:	Date:	
	R	esolution:							Date: _	
NCR:		\	WORK ORI	DER NON-CONFORM	IANCE	(NCR	1)			
DATE	STEP	Description of NC Section A	Initial	Action Description	ction B	Sign &	Verific Secti		Approval Chief Eng	Approval QC Inspector
			Chief Eng	Chief Eng		Date				
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Work Order ID 82113

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Page 3

March-22-12 4:	32:57 PM				"A/ I	1.5"						Page 3
Item ID: Revision ID:	D407-667-2				Accept	*N90	00040	1100)*	Setup Sta	IV	S1*
Item Name:	Crosstube Aft									Ste	$\sim *V$	S2*
	22/03/2012	Start Qt	•	*1*		Cust Ite	em ID:					
Required Date: Reference:	05/04/2012	Req'd Q	ety: 1.00	*1*		Custom	er:					
Approvals:	Process Pla	ın:		Date:	Tooling:		Date:]	Run Sta	1/	R1*
	QC:	-		Date:	SPC (Y/N):		Date:			Sto	^{)p} *N	R2*
Sequence ID/ Work Center II)	Operatio Descripti			Set Up/ Run Hours	Tool I	D Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp.
140		Crosstubes			0.00							
140 Crosstubes		C1033tu0C3	Memo		0.00		•					
			2-Drill and DT8584 as sides. 3-Flip tube a off existing 4-Drill pilot 245. Drill of 5-Drill & rea as per Dwg 16-Drill Aft r Aft side has 7-Drill Fwd only the top	rill all (3) top holes. Ream all holes in tube toper Dwg D407-667-245 and switch drilling Jigs holes using "T" pins. holes using drill Jig DT mly the top (2) holes. am the top (2) holes to f D407-667-245 ivet holes using drill Jig 3x top holes. rivet holes using drill Jig (3) holes. es as per Dwg D407-66	I Jig DT8583 & DT8584 as poor of finish size using drill Jig D'Check dimensions between he from right to left, left to right 18583 & DT8584 as per Dwg 18583 & DT8584 as per Dwg 18585 as per Dwg D407-6 g DT8789 as per Dwg D407-6 g DT8789 as per Dwg D407-7-245. Allow rivet to sit belo	F8583 & oles on all four Locate Jigs D407-667- 583 & DT8584 67-245. Note:			N	<i>7</i> 0	/2-	-5-3
			•	·	er chamfer in the cuff D# and	В#						
			10-Deburr &	Inspect for surface dan	nage. Repair damage within	imits as per	N	20			2-5	-3

Dart Aerospace Lt	d
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W/O:			WC	RK ORDER CHANG	ES			,	
DATE	STEP	PR	OCEDURE CHAI		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	•	PAR #:	Fault Cate	jory:	NCR: Yes	No DQ	A:	Date: _	
	R	esolution:	Disposition	:	_ QA: N/C CI	osed:		Date: _	
NCR:			WORK ORDE	R NON-CONFORMA	NCE (NCF	R)			
		Description of NC		Corrective Action Section	on B	Vorifi	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date		ion C	Chief Eng	QC Inspector
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Work Ord		113		*82	113*			Page 4
Item ID: Revision ID: Item Name:	D407-667-20 Crosstube Aft			Accept	*N9000	<u>140100</u>	* Setup	Start *NS1* Stop *NS2*
Start Date: Required Date Reference:	22/03/2012 :: 05/04/2012	Start Qty: 1.00 Req'd Qty: 1.00		1 * 1 *	Cust Item ID Customer:):		
Approvals:	Process Pla	n:	Date:		Dat	•		*NR1* Stop *NR2*
Sequence ID/ Work Center I	D	Operation Description Dwg D407-6	67-245	Set Up/ Run Hours	Tool ID	Tool # Plan Code	Accept Reje Qty Qty	ect Reject Insp.
150 *150*		Crosstubes Chemical Cor	version	0.00	N	10		.:5-3
HandFXtube Hand Finishing Cro	osstubes	Memo		0.00		-		
160		QC3- Inspect Part Finish		0.00				•
160 QC Quality Control		Memo		0.00	l.ડl.o.	-		
170 *170*		QC5- Inspect part comple	teness to step on	<u> </u>	why			
QC	-	Memo		0.00	,	-		

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Quality Control

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W/O:			V	VORK ORDER	CHANGES					
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Part No	•	PAR #:	Fault Ca	tegory:	NC	R: Yes I	No DQ	A:	_ Date: _	
		esolution:	Disposit	tion:	Q <i>A</i>	: N/C Clo	sed:		Date: _	
NCR:		V	VORK OR	DER NON-CON	IFORMANC	E (NCR)			
DATE	STEP	Description of NC		Corrective Actio		l 0: 0	Verific	ation	Approval	Approval
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Work Ore	der ID 82 4:32:57 PM	113		*821	113*							Page 5
Item ID: Revision ID:	D407-667-26	05		Accept	*N900	040	100	ገ*	Setup	Start		S1*
Item Name: Start Date: Required Dat Reference:	Crosstube Aft 22/03/2012 e: 05/04/2012	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item ID: Customer:					Stop	*N:	S2*
Approvals:	Process Pla	ın:	Date:	Tooling:	Da	ate:			Run	Start	*NI	R1*
	QC:		Date:	=	Date:					Stop	*NI	R2*
Sequence ID/ Work Center	ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept	t Rej Qty		leject lumber	Insp. Stamp
180		Outsource process - ND	Γ per QSI038 4.1	0.00		•			(-3			~ · · · · · · p
180 Outsource2		Memo		0.00					,	U12	205	-4
Outsource process	s - NDT	Liquid Pene Issue P/O:/ Level 2 Atta	trant Inspection as per Q LPI as per AS ch copy of NDT results t	SI 038O TM 1417 to work order					.•			
190				0.00								
190		Packaging		0.00				i			(
Packaging		Memo		0.00				-+				Ø₽_
Packaging		Ensure conv	of NDT results attached	to work order							1	2-5-

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QC5- Inspect part completeness to step on W/O

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Quality Control

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W/O:		,	V	VORK ORDER CHANG	ES				
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Part No	:	PAR #:	Fault Ca	tegory:	_ NCR: Yes	No DQ	\:	Date:	
	R	esolution:	Disposit	ion:	_ QA: N/C CI	osed:		Date: _	· · · · · · · · · · · · · · · · · · ·
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Work Ord		113			*82	113*						Page 6		
Item ID: Revision ID: Item Name:	D407-667-20 Crosstube Aft				Accept	*N900	040	100	ገ*	Setup	Start Stop	ı VI,	S1* S2*	
Start Date: Required Date: Reference:	22/03/2012 05/04/2012	Start Qty: 1.00 Req'd Qty: 1.00		*1* *1*		Cust Item I Customer:	ID:							
Approvals:	Process Pla	n:	Date:		Tooling:	D	ate:			Run	Start	*N	R1*	
spprovais;	QC:		_ Date:_		SPC (Y/N):	Date:					Stop	*N	R2*	
Sequence ID/ Work Center II	D	Operation Description		-	Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Rejo Qty		Reject Number	Insp. Stamp	
*210** SprayPaint		SprayPaint Memo			0.00				AB	<u> 1</u> 2	<u> </u>	<u> </u>		
Spray Painting			derside of c	rosstube as sh										
		1-Prime ins	de and outsi	de crosstube	as per DEO D407-667-24:	5 and QSI 005 4.2								
		2-Paint outs	ide crosstub	e with White	Imron as per QSI 005 4.2								-	
		PRIME: 1 Start Time:			A CITAR	COAT !		ì						

Fininsh Time: 8:00 PAINT: 121625 Start Time: 3:45 Finish Time: 4:30

PER ATTACHED INSTRUCTION

UP, 2. us. by

Clear: 121625 start: 3:30 Finish: 4:30

220 *220* QC14- Inspect Spray Paint

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0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

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W/O:	STEP	PROCI	W EDURE CH	ORK ORDER CHANGE	S		T		
DATE	STEP	PROCI	EDURE CH		1		T	A	T
	DATE STEP			IANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No:		PAR #:							
	R	esolution:	Disposit	ion:	QA: N/C	Closed:		Date: _	
NCR:		W	ORK OR	DER NON-CONFORMA	NCE (NC	R)			
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section Action Description Chief Eng	Sign			Approval Chief Eng	Approval QC Inspector
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Work Ord March-22-12 4		113		*82	113*							Page 7
Item ID: Revision ID: Item Name:	D407-667-20 Crosstube Aft	05		Accept	*N900	040	100	n *	Setup S	tart Stop	ı vı .	S1* S2*
Start Date:	22/03/2012	Start Qty: 1.00	*1*		Cust Item l	ID:						
Required Date Reference:	: 05/04/2012	Req'd Qty: 1.00	*1*		Customer:							
Approvals:	Process Pla	n:	Date:	Tooling:	D	ate:		1		tart	*NI	R1*
	QC:		Date:	SPC (Y/N):	D	ate:				Stop	*NI	₹2*
Sequence ID/ Work Center I	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty		leject lumber	Insp. Stamp
*230 *230*		Crosstubes		0.00				A 6	٠		4	•
Crosstubes		Memo		0.00				H.		<u>2</u> – -	5-	10
Crosstubes		up. A/R Prosect 2- Lightly so with 41058 3-Install sup D407-667-2 A/R Sco	al 890 Batch: 12123 EXP: 11/12 cuff the bonded area using wash 'n' wipe opport with Scotch-Weld 145 using installation jigotch-Weld DP460 Batch EXP:	DP460 and install clamps as DT9025. Torque clampsa	d clean the area s per DEO Dwg s per dwg	ì						
240 * 24 0* QC		QC5- Inspect part compl	eteness to step on W/O	0.00				(1)				MM 11.05.1

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Quality Control

W/O:		WORK ORDER CHANGES												
DATE	STEP	PR	OCEDURE CHA	ANGE		Ву	Date (Approval Chief Eng / Prod Mgr	Approval QC Inspector					
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							:							
Part No	•	PAR #:	Fault Cate	egory:		NCR: Yes	No DQA :	Date:						
	Re	esolution:	Disposition	on:		QA: N/C CI	osed:	Date:						
NCR:		· · · · · · · · · · · · · · · · · · ·	WORK ORD	ER NON-CO	NFORMA	NCE (NCR)							
DATE	STEP	Description of NC		Corrective Ac			Verificat	ion Approval	Approval					
DATE	SIEP	Section A	Initial Chief Eng	Action D	escription of Eng	Sign & Date	Section		QC Inspector					
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Work Order ID 82113 March-22-12 4:32:57 PM		*82113*							Page 8		
Item ID: Revision ID: Item Name:	D407-667-20			Accept	*N900040	100	*	Setup	Start Stop	*NS	S1* S2*
Start Date: Required Date: Reference:	22/03/2012 05/04/2012	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item ID: Customer:						
Approvals:		n:		Tooling: SPC (Y/N):	Date:		J	Run	Start Stop	*NF	?1* ?2*
Sequence ID/ Work Center II 250 *250* Packaging Packaging)	Operation Description Pick Kit Memo		Set Up/ Run Hours 0.00	Tool ID Tool #		Accept Qty	Rej Qty Por		Reject I	nsp. Stamp
260 *260* QC Quality Control		QC4- 100% Inspect kits Memo	for completeness	0.00	26 5/17 =	FILUA 184 STAQ 2	Pusson	itive Galive Gebo	BOS BECE	ADD P. SEZ C	SI 9346 Rev P
270 *270* Packaging		Packaging Memo		0.00						عادا	(bed

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Identify and in kanban rack Location:

Packaging

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W/O:			WO	RK ORDER CHANG	ES				
DATE	STEP	PRO	CEDURE CHAN	IGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC inspector
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Part No		PAR #:	Fault Categ	jory:	NCR: Yes	No DQ	A:	_ Date: _	
	R	esolution:	Disposition	:	_ QA: N/C C	losed:		Date: _	
NCR:		V	VORK ORDE	R NON-CONFORMA	NCE (NC	R)			
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	Work Order ID 82113 March-22-12 4:32:57 PM		*82113*									Page 9
Item ID: Revision ID: Item Name: Start Date:	D407-667-20 Crosstube Aft 22/03/2012		*1*	Accept	*N900		100)*	Setup	Start Stop	171	S1* S2*
Required Date Reference:	: 05/04/2012	Req'd Qty: 1.00	*1*		Customer:							
Approvals:	Process Pla	n:	Date:	Tooling:	D:	ate:	·		Run	Start	*N	R1*
	QC:		Date:	SPC (Y/N):	Da	ate:				Stop	*N	R2*
Sequence ID/ Work Center I	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Re Qt	-	Reject Number	Insp. Stamp
280		QC21- Final Inspection -	Work Order Release	0.00							, 1	\sim
280 QC Quality Control		Memo		0.00					ľ	2/5	123	*

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NCR:		V	ORK OR	DER NON-CONFORMA	NCE (NCR	1)			
DATE	STEP	Description of NC		Corrective Action Section		Verific	ation	Approval	Approval
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Picklist Print March-22-12 4:33		,							·				Page
Work Order ID: 82	2113		*	82113	<u></u> *		- , ~						
Parent Item: D	407-667-205			-	, -667-2	∩5*					•		_
Parent Item Name:	Crosstube Aft	·	•		-()()) -2	(),)			Start Date: 22/0 Start Qty: 1.00		=	d Date: 05 ed Qty: 1.	
Comments:	IPP Rev:C 05.09.02 IPP Rev:D Added JLM	2 Add holes for of Magnobond, Rub											
	****CHANGE TO 0 IPP Rev:E 08-05-2 by:EC IPP Rev:F 08-06-12 IPP Rev:G 08-08-1 IPP Rev H 09.01.0 10.04.07 revise rou removed abrasion st by:DD 11.10.03 DEO D40	2 add comment in 2 add comment in 19 revE as per do 06 ECN 08-562 te seq. in bom DI 11-551	n seq. 6 n seq. 2 wg DD EC D verif EC ver	and QC15 a Do verified by: Coverified by: JLM II rified	nd QC5 DD vo fied by:EC EC /:DD IPP Re	erified							
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D407-667-205TRN		Manufactured	No			110	Each	2.0000	1	1			
D407-66 Crosstube Turning Detail		≀N							**			12-5	ــــــــــــــــــــــــــــــــــــــ
Crosstate running Setur	'			Location LG	1 530 79744 79745	<u>Loc</u> 8/8	Oty 2 1	Loc Code	É	9	- -		

Washer

D2873-043

AN960JD516

NAS1149D0563J Purchased

Manufactured No

No

Nut Plate Assembly

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230

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Location LG052 20 72644 80228 18 A 12-5-10

118 SuE 12/5/14

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Part No	•	PAR #:	Fault Cate	egory:	NCF	l: Yes I	lo DQ	A:	_ Date: _	
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DATE	STEP	Description of NC		Corrective Action	Section B	0: 0	Verific	ation	Approval	Approval
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March-22-12 4:33:01 PM

Work Order ID: 82113		*8	2113*						
Parent Item: D407-667-205			407-667-2	05*					
Parent Item Name: Crosstube Aft						St	tart Date: 2	2/03/2012	Required Date: 05/04/2012
						S	Start Qty: 1	.00	Required Qty: 1.00
D2873-045	Manufactured	No		230	Each	13.0000	2	2 .	
D2873-045							**		Af 12-5-10
Nut Plate Assembly			82947 Location	<u>L</u> 0	oc Qty	Loc Code		3	
			LG052 80162		13 13				_
D2894-1	Manufactured	No	00102	230	Each	5.0000	1	1	- <u> </u>
D2894-1							**		W)2. 05. 08
			Location	<u>L</u>	e Oty	Loc Code			
			LG052		5				_
D3190-1	Manufactured	No	75212	230	5 Each	49.0000	2		-
D3190-1 Chaffing Shield	Manuractured	NO		230	Each	49.0000	2 **	2	Al 12-5-10
onang onera			Location	<u>L</u> c	c Oty	Loc Code			
			LG053		23				
			75947		23				-
			LG055		26			_	

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Part No		PAR #:	_ Fault Ca	tegory:	_ NCI	R: Yes I	No DQA	·	Date:	
	R	esolution:	_ Disposit	ion:	_ QA	N/C Clo	sed:		Date: _	
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DATE	STEP	Description of NC		Corrective Action Section	ion B		Verifica	ıtion	Approval	Approval
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Picklist Print March-22-12 4:33:01 PM									Page 3
Work Order ID: 82113		*8	2113*	· · · · · · · · · · · · · · · · · · ·					
Parent Item: D407-667-205 Parent Item Name: Crosstube Aft			407-667	-205*			art Date: 2 Start Qty: 1		Required Date: 05/04/2012 Required Qty: 1.00
D3595-063-450	Manufactured	No		230	Each	130.1095	2	2	Λ
D3595-063-450 RUBBER CUSHION	N						**		W 12.05.08
			Location	<u>L</u>	oc Oty	Loc Code			
			LG051		88				-
			80161	40	88				_
			MAT052 67353	42.	109474 2			-3	_
			68893		6				<u>-</u> ·
	B# 2016/		70113		0.56				
			71354		0.2				_
			74113	0.	349474				
			75597 77678		1 32				-
MS20601-AD4W8	Purchased	No	77070	230	Each	162.0000	14	14	-
*MS20601-AD4							**	17	A 12-5-10
RIVET	VVO		st322 12125	5				(14)	AF 12-5-10
			Location		oc Oty	Loc Code		\odot	
			LG051		162				
			121017		162				_
MS21920-22	Purchased	No		230	Each	80.0000	4	4	-
MS21920-22 Clamp(per MIL-DTL-8783C)							**		A 12-5-10
			Location	<u>L</u> c	oc Oty	Loc Code			
			LG		14				_
			119545		14				_
			LG050		66				-
			116207		7 .				-
			117506 118186		1 8				_
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Work Order ID: 82113		* 0	2113*							
Parent Item: D407-667-205				2054						
Parent Item Name: Crosstube Aft		^1 .)407-667-	ノロ5^		64		2/02/2012	ъ .	LD / 05/04/2012
Tarent rem rame. Grosstage rate							art Date: 2			Date: 05/04/2012
M631020 37							tart Qty: 1		Require	d Qty: 1.00
MS21920-25	Purchased	No		230	Each	161.0000	2	2	1)	
MS21920-25 Clamp(per MIL-DTL-8783C)							**		W	12: 05: 08
			Location	<u>I</u>	oc Qty	Loc Code				
			LG050		161				_	
			116264		2				_	
			117998 118142		4 4					
			119339		2				_	
			119746		2				_	
			120475		47					
			120920		100				_	
AN5-10A	Purchased	No	•	250	Each	358.0000	10	10	人	
AN5-10A							**		JB	
			Location	<u>I</u>	oc Qty	Loc Code				
			ST337		358					
			118191		80				_	
			120630		30				=	
			120717 120770		50 198			12071	7	
AN5-32A	Purchased	No	120770	250	198 Each	248.0000	4	4 ~	_	
	i di chased	7.0		250	Buen	240.0000	**	4 0	\	
AN5-32A							^^		JB.	12/05/1
Bon			Location	T	oc Oty	Loc Code			2 ~	,
			ST339	<u>.</u>	248	Loc Code				
			119328		93			11932	-8	
			119862		50			11 100	- ·	
			120423		75				_	
			120910		30				_	

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DATE	STEP	Description of NC	Initial	Corrective Action		B Sign &	Verification		Approval
		Section A	Chief Eng	Action i	Description lef-Eng	Date	Section C	Chief Eng	QC Inspector

Picklist Print Page 5 March-22-12 4:33:01 PM Work Order ID: 82113 *82113* Parent Item: D407-667-205 *D407-667-205* Parent Item Name: Crosstube Aft Required Date: 05/04/2012 **Start Date: 22/03/2012** Start Qty: 1.00 Required Qty: 1.00 AN5-34A Purchased No 250 Each 70.0000 5*AN5-34A* ** Location Loc Qty Loc Code ST339 70 119328 20 120422 50 MS21042L5 Purchased No 250 Each 1,570.000 >*MS21042L5* 13 12/05/11 ** Location Loc Oty Loc Code ST300 1570 116105 5 116548 43

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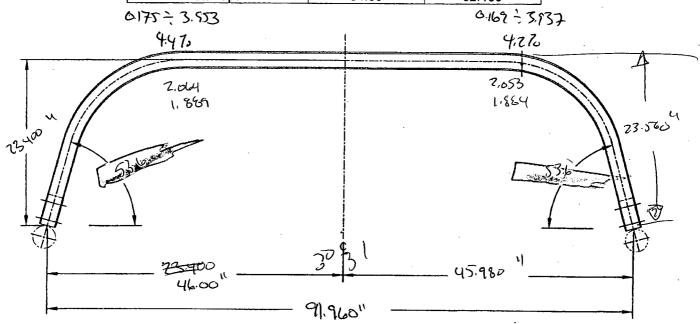
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DART AEROSPACE LTD	Work Order:	82113.
Description: Crosstube High Aft (407)	Part Number:	D407-667-205
Inspection Dwg: D407-667-245 Rev: F		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	45.79	46.05
Angle	54	56
Total Span	91.58	92.100



Comments								
S/DO A = 44% (Mushin @30 Paster							
Sbe B= 4,2%	Crushin @ 3/ Passes							
	0							
	teceptable of 12.05.03 (15) UPL							
QC15 Inspection	0							
Date	176563							

Rev	Date	Change	Revised by	Approved
Α	07.02.06	New Issue	KJ/JM	
В	09.06.22	Dwg Rev updated	KJ	
С	11.08.22	Dimensions updated	KJ 10	
D	11.09.30	Dimensions updated	KJ 🗱	F.

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Item	QTY -245	PART NUMBER	DESCRIPTION
1	X	D407-667-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
2	1	D6011-115	CROSSTUBE
3	2	D2856-400-773	ABRASION STRIP
4	2	D2873-043	NUT PLATE
5	2	D2873-045	NUT PLATE
6	1	D2894-1	SUPPORT
7	2	D3190-1	CHAFING SHIELD
8	2	D3595-063-430	RUBBER CUSHION
9	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
10	4	MS21920-22	CLAMP
11	2	MS21920-25	CLAMP (OR MS21920-24)
12	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947- 100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

1) MATERIAL: MANUFACTURED FROM D6011-115

FINISHED LENGTH = 112.91±0.020

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2

3) TOLERANCES ARE PER DART QSI018 UNLESS OTHERWISE NOTED.

UNITS: INCHES UNLESS OTHERWISE NOTED.

BREAK SHARP EDGES: 0.005 TO 0.010 MAX.

IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.

WEIGHT: 27.7 lbs

PART IS SYMMETRIC ABOUT CENTERLINE.
RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.

11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

12) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO

13) INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE

NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS.

ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.

14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, PER QSI 035.

16) INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS ON BOTTOM SIDE OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.

17) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

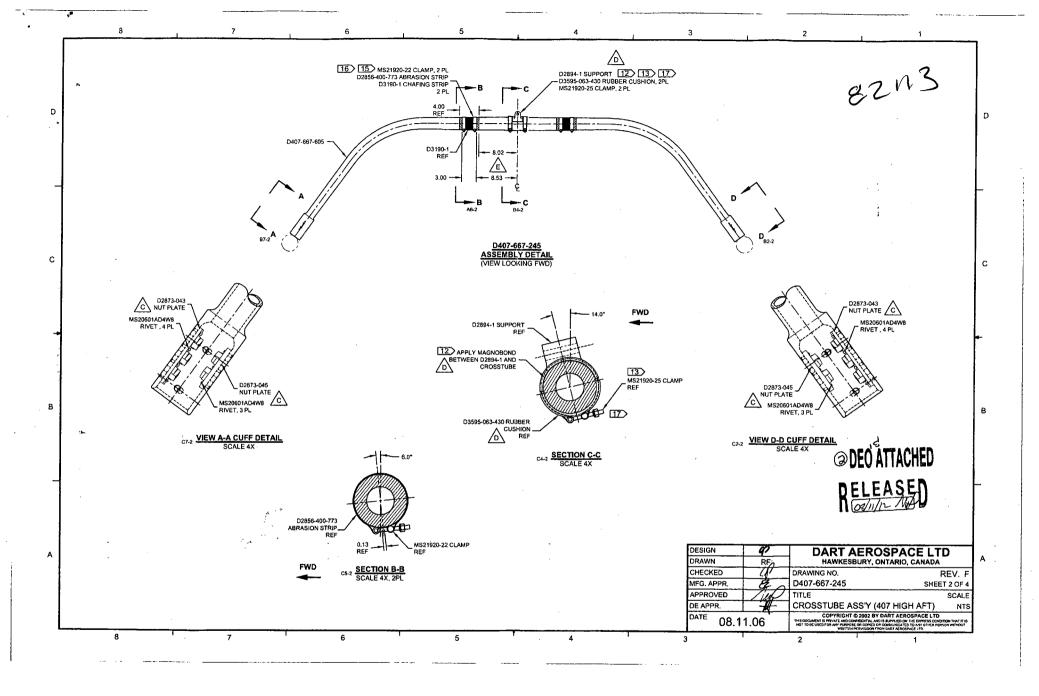
SHOP COPY **RETURN TO ENGINEERING** UNCONTROLLED COPY SUBJECT TO AMENDMENT WITHOUT NOTICE WORK ORDER MCJ NO. 82/13 MCJ 12/03/22

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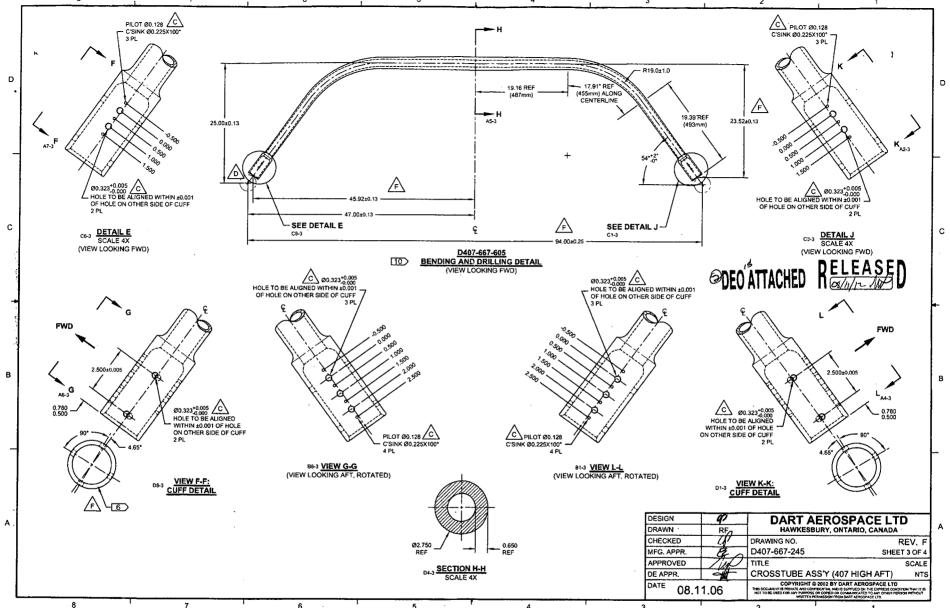
F	REFORMAT NOTES TO NEW STANDARDS (ZN B8-1); RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C6-3, C4-3 & D2-3)	RF	08.11.06
E	8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN D5-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD OL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PAR#08-21 AND ECO	мв	08.07.24
D	ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD CUSHION	PH	07.02.07
С	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.07.26
В	ADD CHAFING SHIELD	CP	03.05.21
Α	NEW ISSUE	CP	02.05.13
REV.	DESCRIPTION	BY	DATE

DESIGN	41	J DART AEROSPACE LTD					
DRAWN	RF ₂	HAWKESBURY, ONTARIO, CANADA	_				
CHECKED	4	DRAWING NO.	REV. F				
MFG: APPR.	8	D407-667-245 SHEE	T 1 OF 4				
APPROVED	111	TITLE	SCALE				
DE APPR.	74-	CROSSTUBE ASS'Y (407 HIGH AFT)	NTS				
DATE 08.1	1.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT OF PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE SUPPLIES CONDITION TO BE LISTED TO ANY DISPOSATION OF THE PRIVATE AND TO SAME PRIVATE PRIVATE PRIVATE PRIVATE PRIVATE PRIV					

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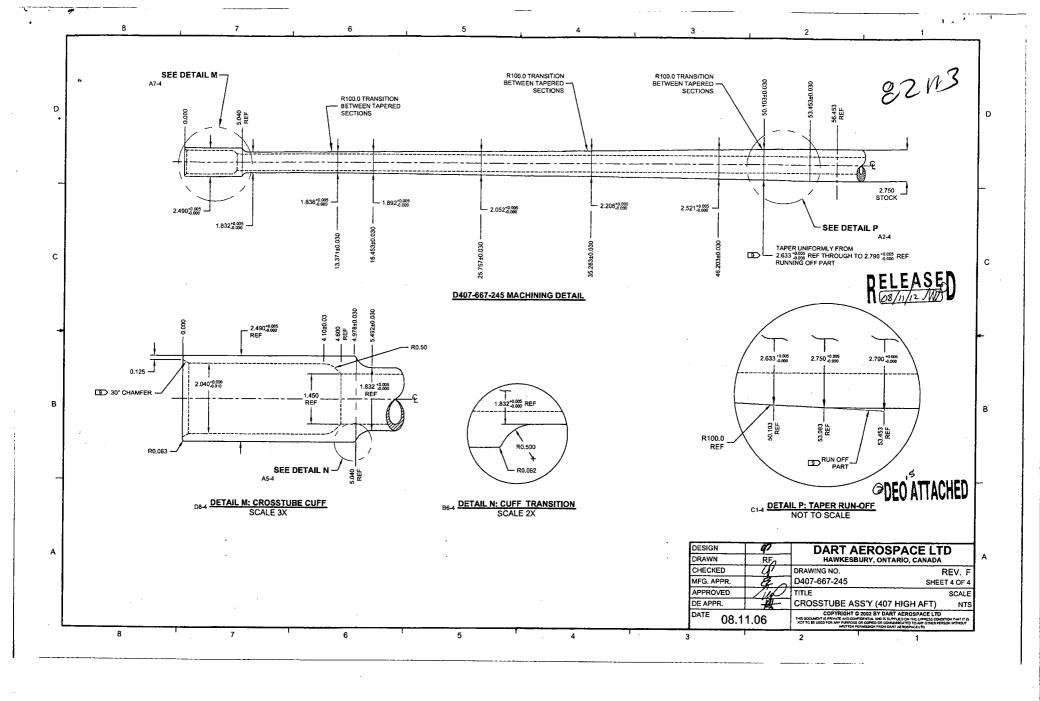


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DRAWING NO D407-667-		E ASSY (407 HIGH	REV. F HAFT)	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D407-667-245-F-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN	_\$	CHECKED	q)	MFG. APPR.	APPROVED /	DE APPR.	
DATE	11.04.08	DATE 11.04	.12	DATE 11.04.12	DATE 11.04.12	DATE 11-04-12	

PURPOSE:

REMOVED ABRASION STRIP IN FAVOR OF A THIN LAYER OF PROSEAL 890.

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

IS:

Item	Qty -245	Part Number	Description	
3	0	D2856-400-773	ABRASION STRIP	<u>=</u>

WAS:

3	2	D2856-400-773	ABRASION STRIP

NOTES 2 AND 15, SHEET 1 ARE AMENDED AS FOLLOWS:

IS:

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (HATCHED AREA) AND PAINT OUTSIDE PER DART QSI 005 4.2
REMOVE MASKING AND APPLY CLEAR COAT

15) APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3190-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEALED D3190-1 CHAFING SHIELDS ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.

WAS:

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2

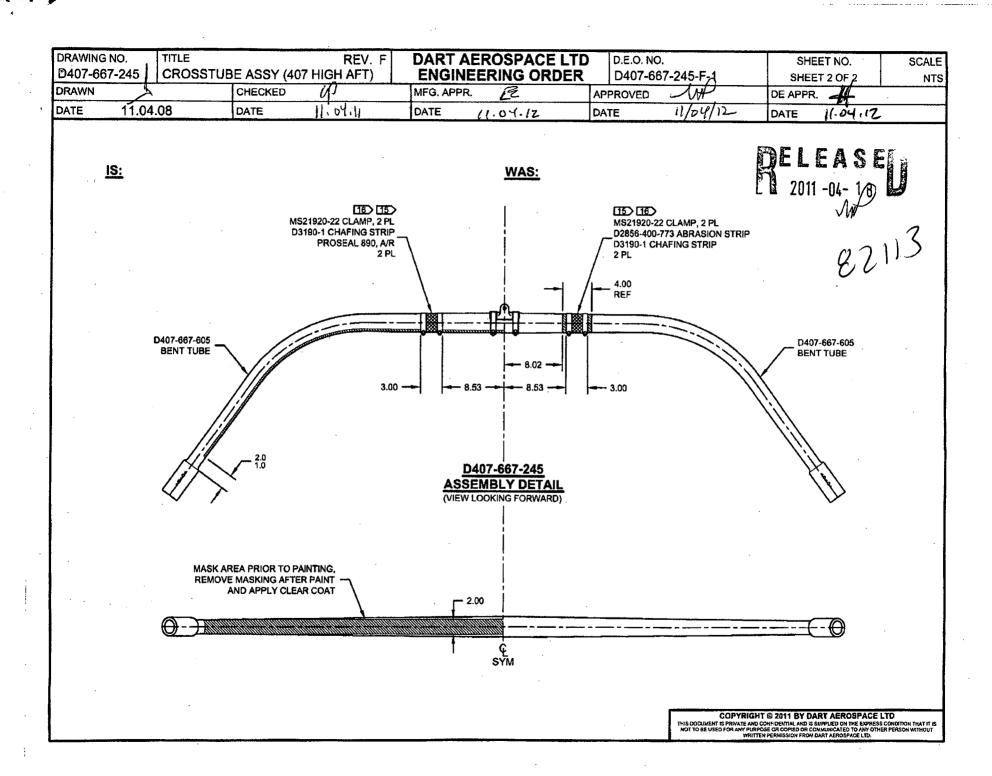
15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 REF GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035. 82113



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D ₂ 407-667-2	245 CROSSTU	BE ASS'Y (4	07 HIGH AFT)	ENGINEE	RING ORDER	D407-667-245-F-2	SHEET 1 OF	NTS
DRAWN	P	CHECKED	ASS	MFG. APPR.	G	APPROVED W	DE APPR.	
DATE	11.09.07	DATE	11.09.19	DATE	11-09-19	DATE 11.09.19	DATE 11.09.19	

PURPOSE:

REPLACE MAGNOBOND WITH 3M DP460 SCOTCH-WELD EPOXY ADHESIVE

CHANGE:

IS:

Item	Qty -245	Part Number	Description
12	A/R	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD

WAS:

12	A/R	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

NOTE 12 & 17, SHEET 1 IS AMENDED AS FOLLOWS:

- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

WAS:

- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.



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WHITTEN PERMISSION FROM DART SEROSPACE LID.

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CLIENT JAK HEROSPACE	DATE		TIME AM A PM D
ATTENTION LIDA CHANTAL, MATT	ACUREN JOB NO.	10 34	Celal
ADDRESS 1270 ABERDEEN ST.	PO/WO No.	16903	
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PROJECT PROJECT FRANCESCENT Live Dais	elyasi iasiectico or	O & Elessiube !	X ENELLE PREST FINAL
ITEM(S) EXAMINED		ş i	X Tube
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SCOPE PERFERENCE A WET FLOO LPI OR	100% OF IHE OXIER	NAL SERFACE OF	1 12 THS METHODARY
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TEST DETAILS METHOD	WATER WASH	_ Q ŞOLVENT REMO	VASLE - D POST EMULSIFIED
METHOD E FLUORESCENT 3 VISISLE		798 ZOUTPUT > 1000	
PENETRANT 26-63 MINIMUM DWELL TIME 13		LASHLIGHT 3 TROUBLELIGHT	☐ OUTPUT>100 fc @ SURFACE
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DEVELOPER TYPE WAN AQUEOUS D AQUEOUS D DS		<u> </u>	CAL DUE DATE CO PORTO
Test Surface			
SURFACE CONDITION		2- SHOT BLASTED	CLEAN BARE METAL
SURFACE TEMPERATURE D < - 4°C/ 20°F TO 1	0°C/50°F .	10°C/50°F to 52°C/125°F	□ > 52°C/125°F
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APPLICABLE STADD ADD Scope of Services	M	12.05.04	<i>f</i>
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in wr. An all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren-	iling. Under to circumstances shall such serv	ices extend beyond the performance of to	he requesiva services. It is expressly understood
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Daily Time Report

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Change Record

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